THE

COMMON SCHOOL JOURNAL.

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PUBLISHERS' NOTICE.

The commencement of a new volume of this Journal seems to call on the publishers to say a few words to their patrons and to the public. It is a source of comfort, that the Journal is still alive, when we consider the indifference with which all matters on the subject of education are viewed, in comparison with the lighter and more excitable literature that has stolen away the hearts of this people, and has made of them a reading rather than a thinking generation. We could afford, without a murmur, to see the Journal remain in the unfashionable class of literature, were our pecuniary interest alone to suffer; but who does not see that the education of the coming generation is the great concern of our race, and that, on the fidelity and thoroughness with which it is conducted, depends, not the improvement merely, but the existence of every valuable institution, of every glorious hope, that we have inherited? Among the various means that must be used, next to numerous and competent teachers, and a zealous and efficient ministry, is, perhaps, the diffusion of correct knowledge on the subject of education; indeed, it may be questioned whether this knowledge is not essential and preliminary to the successful exertions both of the teacher and minister. A very extensive intercourse with the Common School teachers throughout our State, during the past year, has satisfied us that they all need, (and many are sensible of their need,) the aid of the Common School Journal; but they offer numerous excuses for not becoming subscribers, two of which it may be well to notice. "We do not expect," say many of them, "to continue in the profession. We wish to raise a certain sum of money for another purpose, and, as soon as we raise that, we shall cease to be teachers. If the Journal were thrown in our way, we should be glad to read it; but we cannot afford to spare a dollar to pay for it." Others have said, "We give satisfaction now, and could do no more if we gave a portion of our scanty pay for the Journal, or other works on education; besides, we are engaged only for a few months, and need every cent we earn in winter to support us when the school season is over, and we may be out of employment." Now, it seems to us that the wants of both these classes, and also the wants of school committees, clergymen, parents, and all who feel an interest in the subject of education, may be met in a very simple and easy manner. We have been advised by many to bring the subject of supplying every school district with a copy of the Journal before the Legislature, as a proper object of public concern. But if the districts themselves would take the matter in hand, and procure all the volumes of the Journal, and subscribe for the future volumes, to be the property of the district, and placed where the teacher of this year, or of any subsequent year, may have free access to them, every objection would be obviated, and every advantage secured. That the Journal contains much that is essentially necessary, not only to the Massachusetts teacher, but to every teacher, and every person concerned in the establishment or management of systems of public instruction, is manifest, not only from the greatly increasing demand in our own State for complete sets of the Journal, but from the increased demand from other States, and even from foreign countries. The world seems to be at last awaking to the importance of education, and, wherever a movement is made, men seem naturally to look to the

school system of Massachusetts, and its exponent, the Common School Journal, as the best guides, the most practical advisers, in the great undertaking. Nor do they mistake; for the Journal contains all the laws which have been enacted by our Legislature on the subject of public instruction; all the reports, acts, and proceedings, of the Board of Education; all the reports, and many valuable practical essays of the Secretary of the Board; many other valuable reports, and many practical essays from experienced teachers and educationists; and, in fine, not a page, that has yet fallen behind the times; and, thanks to the rigid rule of the Editor, not a page of that trifling matter which perishes in the reading.

The district, therefore, may not only place the Journal in its Library, but we would respectfully suggest that every district should also be furnished with a large dictionary, a modern gazetteer, and, in fact, a small selection of *reference books*, to which the teacher and pupils may appeal or apply. Such books are essential to the proper instruction of our *best* schools; and how indispensable must they be to the majority of our schools, where the teachers are young and inexperienced!

We are not without hopes that, during the present year, the friends of education, and of our free school system, will rally round the Journal, and enable us to send it wherever its light can find any lover of truth and of man that needs encouragement or direction. If the State, which requires its Board of Education to disseminate the knowledge it collects, will not enable the Board to disseminate it, the people themselves, in their several districts, or as individuals, must see that the work is done. There is no other educational Journal in New England; and shall it be said that this cannot be supported, when so many millions are annually expended for publications, whose letter and spirit, instead of making alive, seem to have no other object than *to kill?*

WM. B. FOWLE AND N. CAPEN.

We salute, most heartily, with the gratulations of the season, our circle of subscribers, correspondents, and educational friends, wherever they may be. Without the burdensomeness of prefatory or apologetic expressions, we request our subscribers to accept our thanks for their patronage, our correspondents for their assistance, and our friends for their sympathy. In commencing the EIGHTH VOLUME OF THE COMMON SCHOOL JOURNAL, we venture to promise them, that, if they will confide in us hereafter as they have done heretofore, we will use our best endeavors that they shall not find their confidence misplaced. We enter upon the labors of another year with no abatement of "heart or hope." As we understand the subject of education better, we love and reverence it more. As we become more acquainted with its power and beneficence, we wish more earnestly that its kingdom may be extended, until it shall include all other kingdoms, and embrace the whole earth in its benign control. Can any rational or religious man believe that the kingdom of heaven will ever come upon earth until a moral and religious education shall have prepared the human family to understand and receive it?

Before entering upon the discussion of any of the topics appropriate to the present occasion, we have the melancholy duty to perform of announcing the death of our personal friend and co-laborer, FRANCIS DWIGHT, Esq., of Albany, so long and so widely known as the able, the sincere, and the efficient

advocate of Common Schools. Mr. Dwight died at his residence, in Albany, on the 15th of December last. At the time of his decease, he was a member of the Board of Education of the city of Albany, and editor of the District School Journal. Since the organization of the State Normal School, at Albany, in 1843, Mr. Dwight had been a member of its executive committee, in company with those distinguished men, Col. Young, Dr. Potter, the Hon. Gideon Hawley, Dr. Campbell, and the present Superintendent of Common Schools for the State, the Hon. N. S. Benton. He had also previously filled, for several years, the responsible office of county superintendent of Common Schools. With other eminent friends of popular education in the state of New York, Mr. Dwight had been actively instrumental in devising, and in causing to be placed upon the statute-book, the present code of laws on the subject of public instruction in that State, which code, at the time of its adoption, and until it had been substantially copied by other Legislatures, was the most perfectly organized and efficient system in the world. In all these stations of honor and of trust, Mr. Dwight had conducted himself with great discretion, ability, and zeal. As an examiner of schools, he was competent, impartial, and thorough, having the readiest disposition to discover and to applaud the acquisition of knowledge, and the justice to unmask and expose pretension and ignorance. As a member of the executive committee of the State Normal School at Albany, he assisted in establishing that school upon a most admirable foundation, whether we consider the course of instruction there pursued, or the inducements held out to invite talent and educational enterprise from all parts of the State to avail themselves of its advantages. As editor of the District School Journal, being aided by the patronage of the State, which, at the expense of the Common School fund, sends one copy of the Journal to every school district within its ample borders, he has spread before the people an amount of documentary information, on the organization, the defects, and means of improvement, of Common Schools, more copious than was ever distributed before, in any part of the world. Continually supplied with their able reports by the county superintendents, the Journal has made the atmosphere of New York nutritious with Common School ideas, and electric with Common School zeal.

In the prime of life, and in the full vigor and maturity of his powers, and capability of discharging his duties, Mr. Dwight has left that noble sphere of action, which, from the affinities of his own mind to virtue and to usefulness, he had chosen. Public sorrow and private friendship mingle their regrets at his loss. At this season, when the harvest is so plenteous but the laborers are so few, ill can such a workman be spared. But submitting, in resignation and humility, to this dispensation of

Providence, let us hope that a successor equally able and faithful will soon rise up to fill his place. In the mean time, let all his coadjutors feel that the services which he would have performed for the advancement of the cause, had he lived, have devolved upon them to be performed, now that he is dead.

Education is *omni*-form, and every form is a blessing. In the plenitude of its manifold attributes, it can, at the same time, supervise the lowest interests of the body, and consecrate itself to the highest interests of the soul. To trace the power and the beneficence of education, let us begin with the body, as a starting-point, — its limbs, its organs, its instruments of sense, — and then go outward, in concentric circles, to consider what surrounds it, whether less or more remote from this central point. Compare the body of a completely educated man with that of a Hottentot, a Fejee Islander, an Esquimaux. Compare, or rather contrast, the hand of the savage with the hand of an artisan or artist. In each the number of muscles is the same; the bones and joints are the same. Physiology can detect no difference in their structure, nor chemistry in their original elements or compounds. Yet how rude and rigid is the one; how dexterous and cunning in all the works of art, — whether its utilities or its beauties, — is the other! Compare the feet of the one class with those of the other. Is there not the same complement of bones and muscles in each; — the flexors and extensors, the tarsal and the metatarsal, are they not the same? — and yet the one never dares to go beyond its native hunting-grounds, or its war expeditions against a neighboring tribe, while the other traverses mountains and continents, and is able to retrace its steps. Both the educated and the uneducated man stand in the same material universe; the same heavens bend over them, and the same earth stretches out beneath their feet. Upon the eye of each descends the light of the same sun and the same stars, and their ears are forever open to the same harmonies of nature. Yet, while the one recognizes overwhelming proofs of the power, and the wisdom, and the goodness of God, the other is blind amidst the splendors of the universe, and deaf to that perpetual chorus of praise which ascends from all created things to their Creator.

The man whose body has been well trained, has a power of physical performance and of physical endurance, which the barbarian never attains. The former can out-run, or out-travel, or out-watch, or out-work, his savage competitor. Should any accident befall any part of his frame, he has remedies which the other never can command. Is a bone broken, it can be reunited by surgical skill. Is a joint severed, it can be reknit. Is a blood-vessel opened, it can be stanched. The educated man knows the laws of digestion, of respiration, of exercise;

and, by obedience to them, he is as sure to obtain their natural products, — health, cheerfulness, and length of life, — as is the sower, who sows his seed at a fitting time, upon a fitly prepared soil, to reap a harvest.

Should it be said that deep suffering and fatal disease often attack the digestive and respiratory organs of men and women in educated communities, we reply, — after admitting to its full extent the deplorable fact, — that, although the victims of these maladies may live amongst educated people, and may themselves be educated in some particular things, yet, in those things in which they suffer, they are not, or were not, educated. Sometimes, it is true, the possession of painful diseases is an estate by inheritance, and not by acquisition, the maladies having descended from parents, in fulfilment of the great law, by which the iniquities of the fathers are visited upon the children unto the third and fourth generation; but leaving this class of cases out of view, the man or woman who suffers from indigestion, because he has eaten what is improper in quantity or in quality; who suffers from breathing foul air, because he will not let down into his apartment some portion of the sky-full above him; who suffers from the want of personal cleanliness, because he will not use what water the ocean, the streams, and the clouds, are giving him; or who suffers from sluggishness, because he is too indolent or torpid to take exercise; such men and women, — no matter among whom they may live, or what other things they may know or do, — are, *in these respects in which they suffer*, Hottentots, Fejee Islanders, or Esquimaux. They have not learned and practised the laws of health and life, and, therefore, *so far*, they are still barbarians. The great principle cannot be too often repeated, that the only thing in which civilization and Christianity differ from barbarism and heathenism, consists in a knowledge and an observance of the laws of God. So far as any one knows and obeys any law of God, whether a physical or an intellectual, a moral or a religious law, he is civilized; so far as he is ignorant of, or disobeys those laws, or any one of them, he is still a savage, though he may be seated on the proudest throne in the world.

The term *Civilization*, as it is generally used, is exceedingly vague and indefinite. True civilization is not a unit, but a compound; — a compound, formed of many elements. As the world may, at the same time, be partly civilized and partly barbarous, so may a nation, and so may an individual be. So far as a man arrives at a knowledge of his duties and his destination, and consciously acts in conformity with them, so far he is civilized; but so far as he is ignorant or consciously disobedient, he has no title to that honorable epithet; and the contrasts between one nation and another, or between one portion of a community and another portion of the same, are not stronger than are sometimes seen between one attribute

or faculty of the same individual and another attribute or faculty belonging to him. In Napoleon, what quickness of perception, what powers of combination! The celerity with which his armies moved, and the victories which they won, were only an outward and visible representation of the inward energies of his soul. Yet, in all the noblest attributes of humanity, he was another Alaric! Perfect in military knowledge, perfect in financial skill, yet with as little recognition of the rights of his brethren of the human race, as Cain showed for Abel's. In Lord Byron, what a cultivated and polished intellect; and what licentious passions! In contemplating the elevation of one part of his nature, and the debasement of another, we are reminded of a picture drawn by the ancient poets in their cosmogonies, where they represent the new-formed earth, with all its energies fresh and unexhausted, as producing the different races of animals from out its teeming bosom. Conspicuous among all the rest, the lion is emerging from the ground. With his majestic head and fiery eye above the surface, he is pawing to make free his hinder parts; but the tenacious slime still binds him down. Thus did the mighty genius of the great English bard rise above the earth, while his propensities bound him down, in the foulest slough of sensualism.

A man, who, like an inebriate, an epicure, or a libertine, avails himself of the arts and powers of civilization to gratify his appetites and passions, is neither a civilized man nor a barbarian. He is a sub-barbarian. His place in the scale of humanity is to be measured from barbarism, *downwards.* Considering barbarism as *zero*, we must measure off the degrees of his degradation, by counting netherwards.

A man is not educated because he buys a book; he is not educated because he reads a book, though it should be the wisest book that ever was written, and should enumerate and unfold all the laws of God. *He* only is educated, who practises according to the laws of God. If one has been educated physically, he can make or earn such a book; if he has been educated intellectually, he can understand it; if he has been educated morally, he will practise according to it.

Directly connected with the welfare of the body, are two other great results, derived from the progress of education, and from that alone; — namely, the freedom of educated communities from famine and pestilence. The havoc of famines and pestilences has not been confined to low conditions of barbarism only. Communities must have advanced no inconsiderable distance on their way towards civilization before they earn exemption from these scourges. In this nineteenth century, we can have no adequate conception of the terrific ravages once committed by them. Famine has been prevented, in modern times, by the combined effect of the abun-

dance of production, and the arts of transportation ; — so that famine itself has died of famine ; — that is, by being deprived of those supplies of ignorance, on which it depended for an existence. In former times, pestilence generally followed in the train of famine, — the privations of the latter inducing the former. But pestilence has other origins, — especially in the want of cleanliness of habitation and of person, and in the forcible exclusion of pure air. Each of these fatal errors, education has done much to remedy. In northern latitudes, where the cold is a source of discomfort, all the arts were for a long time enlisted to devise means for excluding it from dwellings. The ignorant contrivers did not know that, when they excluded fresh air, because it was cold, they banished also from the lungs and blood the vital principle of health and life, which is to be found in the air, and nowhere else. Education is making men acquainted with this folly. It has opened, and is opening, more and more, for their benefit and enjoyment, that spacious, aërial treasury of the sky, *from which all the ignorant once carefully locked themselves out.* Just so fast as physical education advances, it is building baths, — not as the old Romans, or the modern Turks build them, for luxury alone ; — but on the higher principle of health, without which there can be no luxury. Physical education is thus cleansing mankind from the impurities of the body, — a beautiful and a scriptural emblem of that Christian education which is washing away the impurities of the heart.

Regarding the body as a central point, we have now rapidly touched upon a few things, showing how its dangers are averted, its diseases and casualties relieved, its powers increased, and its universal welfare promoted, by the aid of education. Let us now, for a moment, compare the educated with the uneducated man, in respect to the circle of things that lies next to the body, — immediately around it, in contact with it, and, in a certain sense, almost a part of it. A cane in a man's hand, by which he reaches an object that he could not touch without it, has been said to be only an elongation of the fore-arm, — a piece of wood, *spliced on* to the ulna and radius. For the moment, it might be more convenient to have an arm of such length that we could reach an object ten or twenty feet above us, or beyond us ; but it must be acknowledged that such a member would ordinarily be a very inconvenient appendage, — especially at meals or in bed, even though it could be shut up like a penknife, or run together, tube within tube, like a telescope ; — and, therefore, that it is better that we should have an arm of the common length, and rely upon some instrument, as a compensation for the absence of a longer one. Besides, we can make the knife, the hammer, the chisel, the saw, the axe, the spade, and so forth, do an infinite variety of things, that the hand, with

its present structure, cannot do. It may, indeed, be asked, why the hand was not so constructed, originally, as to be able to perform all the things now done through the medium of utensils. Doubtless He who made it could have so constructed it that it should fell trees, bore holes, split stone, cut iron, sew cloth, stir up the fire, dig gravel, perform the office of a wheelbarrow, and do all the other services which it now performs, through the intervention of tools and instruments. But then, if we take an inventory of all the tools of all the artificers, — the tailor, the shoemaker, the whitesmith and the blacksmith, the forger, the mason, the carpenter, the machine-builder, the chemist, the surgeon, the optician, and so on to scores of others, we shall discover, without any very profound cogitation, that, for the accomplishment of all these purposes, the hand must have consisted of many more parts than there are hairs on the head, and must have been so tempered as not to flinch either in furnaces, or in freezing or boiling liquids. It would also require something of an Anak to carry such a chest of tools about the person, — literally, *in manu*, — and all must be present though only one should be needed. We can conceive, indeed, that the hand should have been capable of performing all the services of a sawing or a flouring mill, a cotton or a woollen factory, a machine to roll iron or drive piles; but all this would only have added to its weight and complication, — to say nothing about making a provision *somewhere*, for the power necessary to operate it.

On the whole, therefore, it was considered best to make the arm from thirty inches to three feet in length, and, by a simplicity of arrangement which divine skill only could have reached, to divide its extremity into five beautiful fingers; to give to these fingers many joints, that they might bend, and many muscles, that they might grasp; to cover their surfaces all over with nerves, that they might have an exquisite sense of touch, and to fill their substance with blood-vessels, that all parts of them might be nourished; and then to fasten the whole at the shoulder, the elbow, and the wrist, in such a marvellous manner that there is not a spot within its length which it cannot reach, nor a conceivable motion that it cannot perform; and thus to endue this light and conveniently portable instrument with the power of making all the utensils and all the apparatus that should ever be needed. Any one who will read Dr. Bell's Treatise on the Hand will probably be convinced of the wisdom and goodness that led to this conclusion.

The magnificent telescope of Lord Rosse has a reflector whose diameter is six feet. It collects, therefore, all the rays of light which fall upon a circular area six feet in diameter, and pours them upon the eye. It is equivalent to an eye whose pupil is two yards across.

Now, if the staff, the axe, the hammer, the rake, the hoe, the

auger, may be considered as an extension or modification of the arm and hand, or as substitutes for a different construction of them, then is such a telescope a substitute for an eye whose pupil is six feet in diameter; — and, unless the whole structure of the human frame should be very materially changed, we do not see where the socket for such an eye could be conveniently placed. It would be a problem to puzzle the Brobdingnagians themselves, and one at which spectacle-makers would stand aghast.

So, too, with our organs of locomotion. Our bodies might have been stilted up on limbs for which the fabled "seven league boots" would be a "good fit;" although the animals from whose skins such mighty "Suwarrows" might be made, must be of ultra-saurian dimensions. But, on the whole, it must be confessed, that a pedestrian, although supplied with such nether limbs as we have supposed, would still be inferior, with all his facilities for walking and wading, to a man of the ordinary size, having railroads and sea-steamers at his command.

It has been left, then, for human art and skill to devise and to prepare these various sets of *secondary* organs and instruments, so that, while we enjoy all the manifold benefits which they can confer, we are relieved from the weight, and the cumbrousness, and the danger, of being tools and apparatus, and telescopes and steam-engines, in our own proper persons. The beautiful hand is the representative and former of them all.

We have now opened the way for a comparison between the educated and the uneducated, in regard to the variety and the power of the instruments they have severally invented and prepared. Compare the stone-hatchet, or piece of sharpened iron-wood, with all the varieties of cutlery and hardware; compare pottery with porcelain; the pestle and mortar with a flouring mill; the stitching together of skins with Lowell and Manchester; the use of a pack-horse with a freight train of cars; a few hills of maize with western wheat-fields; an occasional deer or pheasant with the markets of Brighton or Smithfield; a few strings of fish with the treasures of the Grand Banks; the carving of a rude remembrancer on wood or stone with power printing presses and Bodleian libraries; a colored skin or a bedaubed board with Daguerreotyping; the speed of an Indian runner with the magnetic telegraph!

Perhaps civilization ought to blush, for forcing upon the mind the elements of another comparison; but the worth and the necessity of education derive force from the mechanical antithesis which it presents; because this comparison will show what education has failed to do, and what it has yet to accomplish. — Compare, then, we say, the bow and arrow with the armories at Springfield or Woolwich; and the canoe in which a dozen Indians paddle to the battle-field, or the ambush, with the navy of America or the armadas of Britain.

The circle of things we have been considering gradually expands into other circles, without having, in some respects, any very broadly drawn line of distinction between them; and yet they are, in other respects, so substantially different, that they may almost be numbered as first, second, third, and so forth, in their order outwards. Compare the dwellings of the civilized with those of the uncivilized among mankind; the comfortable, well-supplied farm-house with the wigwam; a metropolitan city, its temples, and legislative halls, with an Indian or an African village. Passing by the different kinds of animals domesticated and trained, furniture, and so forth, we come to timepieces, bridges, warehouses, wharves, breakwaters, lighthouses, where, on the uneducated side, we lack the very materials of comparison. A savage, also, who subsists by the chase, needs an extent of territory, which, under the productive powers of agriculture and horticulture, would sustain ten thousand men.

But let us take circles of things still further outward from the body than any of those we have named, and compare the educated with the uneducated in relation to them. Here our view stretches outward illimitably into time and into space, and penetrates the subtle and invisible properties of matter. In geography, what does the savage know of the form of the earth on which he dwells; of the different races that inhabit it; or even of the nations that dwell at any distance from his own? In history, what acquaintance has he with the elder world, with the patriarchs that lived before the flood, or with the sages and seers that came after it; what knowledge has he of that vast procession of nations which has passed over the earth, — the Assyrian, the Egyptian, the Grecian, the Roman; of the mighty dynasties of more modern times, or even of his own lineage and ancestry, at any remote date? But, by the more educated nations, the earth has been circumnavigated, and all its parts laid down in a book, as exactly as a surveyor plots a field he has surveyed; and the race, with its myriad millions, traced back to its unborn parentage.

It seems as if God had assigned different regions of his infinite creation to different minds, as a teacher assigns different lessons to his pupils: — to Euclid, geometry; to Copernicus, the planets; to Newton, gravitation; to La Place, the sidereal heavens; to Bacon, philosophy; to Linnæus and Jussieu, botany; to Cuvier, animals; to Lavoisier, chemistry; to Napier, logarithms; to Hutton, mathematics; to Franklin, lightning; to Watt and Fulton, steam; to Bowditch, navigation; to Farraday, light; and so on with a thousand others; and how gloriously they have mastered and explained their lessons! yet God always selects these great leaders, these *Duces*, from educated nations; and from the laws of mind, established by himself, he must select them there. It would be as contrary to nature

to find discoverers and inventors among uneducated nations, as to find tropical animals and fruits within the Arctic. It is not paradoxical to say that, from an *increasing necessity* of the case, all those explorers who are hereafter to win the honor and enjoy the delight of setting up the standard of discovery in other parts of the immensity of nature, must be selected from among educated people.

By way of exemplification, let us look for a moment at the gigantic strides, and in reference to later discoveries, it would hardly be too much to say the angelic flights, by which the present state of astronomical science has been reached. Suppose it to be already known by various modes of demonstration, that the earth is round, and that we wish to know the length of its diameter. Amid the diurnal revolution of the heavens, it is seen that the north star retains its place, as though it were the extremity of an axis, on which the firmament revolves. Suppose an instrument to have been made by which the altitude of a heavenly body can be accurately measured. Possessed of such an instrument, an observer travels northward from a given point, until the north star appears to have risen one degree from the horizon. He measures the distance he has travelled, and finds it to be 69 miles and a fraction. He has now a unit of measure. He knows that, if the earth be round, there must be 360 such lengths or spaces in its circumference, — this being the number of degrees in a circle. Computation then assures him, that its circumference must be about 25,000 miles, and from this again he knows that its diameter is about 8000 miles in length. Here he has another proved fact; and having laid this firm foundation on the earth, he aspires to learn something of the heavenly bodies. He proceeds to measure the distance of the moon, just as a surveyor measures the height of a tree, or of an inaccessible rock. Using the diameter of the earth as a base line, he supposes two lines to be drawn from its two ends, on opposite sides of the earth, to the moon. This makes a triangle, one of whose sides is the diameter of the earth, — the length of which is known, — and observation, again, gives him the value of two of its angles. Now, such are the properties of a triangle, that if any three of its six parts, (its three sides and three angles,) are known, all the others can be found. In this way, the moon's distance from the earth is found to be 240,000 miles.

The inquirer now makes a more adventurous exploration. By similar observations made upon the position of the sun, rectified and confirmed by observations on the transit of Venus across the sun's disc, — for the purpose of observing which, at the same time, on the opposite sides of the globe, Captain Cook, in 1769, was sent out to the Island of Tahiti, in the Pacific Ocean, — the distance of that orb from our earth is found to be 95,000,000 of miles. Knowing this, it may of course be

known, that the diameter of the earth's orbit is more than 190,000,000 of miles in length, and its annual circuit round the sun nearly 600,000,000 of miles in extent. The diameter of the earth's orbit being now known, it was hoped that, by making use of the earth as a travelling observatory, and taking one observation when it was in its aphelion, and another when it was in its perihelion, — 200,000,000 of miles distant from each other, — and using this as a base line, the distance of the fixed stars could be ascertained. But year after year, as this travelling car swept round the sun, observation after observation was made to see whether some change in the position of the fixed stars could not be detected, if observed from two points so remote from each other as the two extremities of the earth's orbit. But whether viewed from one end or the other of this vast diameter, those stars seemed to stand fast in their everlasting places, both in reference to each other and to the centre of our system.

By a union, however, of the nicest observation with the profoundest calculation, the distance of the nearest of the fixed stars is now supposed to be approximately known. But of what avail to attempt to define such distances by terms so insignificant as millions or billions! To define spaces so vast, some other medium of expression must be adopted. Let us then take the propagation of light, which is the liveliest emblem of velocity. Suppose we were to say, that the speed of a race-horse is ten thousand times greater than that of a snail; and the speed of a cannon-ball ten thousand times greater than that of a race-horse; and the speed of light ten thousand times greater than that of a cannon-ball at the moment when it is projected from the mouth of a cannon; — it is nevertheless true, that it takes light a little more than eight minutes to come from the sun to the earth. But though moving at the rate of 12,000,000 of miles a minute, and though the light of the sun reaches us in about eight minutes and a quarter, yet it would require more than 5,000,000 minutes for the light of the nearest fixed star to reach the earth. But our sun belongs to a cluster or family of stars, not one thousandth part of which can be seen by the naked eye, on the clearest night. Going outwards from our sun, it is supposed that there are not less than Five Hundred ranks of stars, each as distant from the other as the nearest fixed star is to our sun; and that it would take five thousand *Years* for light moving at the rate of 12,000,000 miles a minute, to reach us, from the outermost rank of stars belonging to our system.

But beyond the confines of our system, we come, indeed, to an abyss of space. We have, in the first place, measured the length of a degree upon the earth's surface; from this we have found the earth's diameter; we have next calculated the distance of the moon, of the sun, the length of the earth's orbit;

and now, taking the light for our interpreter, we have endeavored to express the distance of the nearest fixed star, and have found that there are *five hundred* of these stars, rank behind rank, belonging to the system of which we are a part. But all these successes have hardly prepared us to plunge into the void that lies beyond. Compared with the space that now yawns before us, the distance between the earth and the sun is but a threshold. Compared with this dread gulf, the stars belonging to our system, like the inhabitants of a crowded city, are separated only by narrow streets. But are these vast distances untraversable by science? No! The adventurous astronomer leaps them at a bound; and as he trajects himself onward from system to system, he sends back intelligence that these mighty aggregations of worlds may also be "five hundred deep"! And where is the bound? Where is the wall,

> "whose battlements
> Look o'er into the vale of non-existence,
> Nothing's strange abode"?

Viewed from the side of man's weakness and lowliness, this sun-fraught universe seems infinitely grand and sublime; but viewed from the side of the majesty, and power, and infinite attributes of God, all this dazzling array and magnificence, these burning centres of effulgence, in all their height, and depth, and breadth, are but fitting splendors to light up the vestibule of the temple of Jehovah. Equally adorable, whether in his mightiest or minutest operations, it is the same Almighty Being who sustains these systems, in all their bulk and ponderousness, and who upholds the stalk of a flower, and the petal of a flower's cup. It is the same Being who wheels these systems in their stupendous orbits through the heavens, and circulates the life-blood through an insect's heart.

Geology leads us backwards into Time, in the same manner that Astronomy leads us outwards into Space. The one kindles the imagination as fervidly, as it bears it backward into the eternity of duration, as the other does when it causes it to soar outward into an immensity of space.

Having now shown a few of the objects of the material universe which the light of education has shone upon, and made visible by its illuminations, we might proceed to specify the wonders it has achieved in the intellectual world; but this class of its benefactions has, to some extent, been already considered; for, such are the *pervasive* blessings of education, that the good which it does to any part of our nature, diffuses itself over all other parts. Still there are peculiar intellectual gratifications, which it is the prerogative of education to bestow. This chapter, however, is too vast to be entered upon in detail, at the present time. Yet we cannot forbear exclaiming, How delightful, and how convincing, are those dissertations which have been written on the "PLEASURES OF KNOWL-

EDGE"! — hymns sung by men whom knowledge had made tuneful. To the lips of the uneducated, no note of such a hymn ever arises. Indeed, in what are called, — almost by courtesy, however, — educated communities, like our own, the question is not unfrequently asked, What is the *use* of knowing this or that? But these querists never ask, What is the *pleasure* of knowing this or that? — their brutish souls never having tasted enough of knowledge to suggest such an inquiry. Passing by the more obvious intellectual gratifications to be derived from poetry and eloquence, from the life-like drama or romance, — who, if his own intellect has ever been awakened, can read the disquisitions of any sound logician, metaphysician, or jurist, and see the exactness of geometry applied to the looseness of common speculation, and the whole chaotic *nebulæ* of thought, as they lie in other men's minds, reduced to order; — who can see this, without having his whole intellectual sensorium thrilled with delight?

In a Moral and Religious point of view, the space which separates an uneducated from an educated community, is still wider than in a physical or an intellectual one. As we ascend to grander and sublimer subjects, all the elements of superiority become correspondingly grand and sublime. As much better as a great mind is than a huge body, so much better is a pure heart than a splendid genius. Virtuous counsels and a virtuous example are infinitely more precious bequests than houses and lands; and how much more noble and lofty is the unpurchased homage which is paid to the good man for his rectitude and his beneficence, than the obsequiousness which fawns, or the servility which cringes, at the footstool of power! As the offspring of moral and religious emotions, how much better is an institution for the comfort and cure of the insane than the tumuli of the savage, or Egyptian pyramids; and how swiftly and carelessly would a celestial visitant, in quest of the abodes of mercy upon earth, pass by the Parthenon and the Coliseum, triumphal arches and monuments, to seek out an asylum for the blind, or for those deprived of the power of hearing and of speech! The schoolhouse and the church, erected to save us from ignorance and sin, tower up, in the moral perspective, as much above the beacon and the lighthouse, as the heavens above the earth.

Ignorant communities are, to some extent, necessarily idolatrous. Ignorance and idolatry can hardly be separated. God, as the author of the solar system, cannot be known, unless we know what the solar system is. God, as the author of the body, — with its wonderful mechanisms of muscles, and nerves, and lungs, and blood-vessels, and digestive organs, and brain, — is not known, unless we know that such curiously-wrought organs exist within us. God, as the author of all those objects and existences, which can be reached only by

the telescope and the microscope, cannot be known, unless the distant great and the invisibly small are revealed to our eyes. A man ignorant of these things may, indeed, know some other things respecting his Creator; he may recognize some of the spiritual relations in which he stands to him; but in the absence of mere secular knowledge, he mistakes the attributes and the providence of the "living and true God."

He who is ignorant is almost necessarily superstitious. But a Christian education lifts off the whole, black, iron firmament of superstition from the soul, and brings life and immortality to light.

It may be said that, according to these high views of education, but few are educated. Alas! such is the truth, — the incontestable, melancholy truth. The past history and the present condition of the world, — intemperance, war, slavery, bigotry, pride, uncharitableness, self-seeking, — prove it to be true. But what is the moral conclusion from these admitted premises? Surely not that we should despair, but that we should labor; that we should agonize with laboring. The present condition of the race is as much below attainable perfection as it is above possible abasement. The empyrean above is as much without a dome that shall forbid our ascent, as the abyss below is without a bottom that shall arrest our fall. In mid-space we stand. Ascent and descent are equally open to us. We may fall until we become brethren and companions to the savage and the troglodite; we may rise until our spiritual nature shall claim affinity with angels. All those who are worthily laboring to promote the cause of education are laboring to elevate mankind into the upper and purer regions of civilization, Christianity, and the worship of the true God; all those who are obstructing the progress of this cause are impelling the race backwards into barbarism and idolatry.

Beauties of Ignorance. — We perceive, by the papers of yesterday, that "several members of a family, in this city, came near being suffocated by the ignorance of a servant girl, who was using a charcoal furnace, in a close room, for heating irons."

We should rejoice to learn that the accident happened in one of those families, where it is held for good gospel, *that laboring people should not be educated.*

Precocious Talent. — The effects of study vary according to the age at which it is commenced. Long-continued application kills the youthful energies. I have seen children attacked by this literary mania beyond their years; I have foreseen with grief the lot which awaited them; they commenced by being prodigies, and ended by being stupid.

TAKE THE OTHER HAND. — It was one of the first days of spring, when a lady, who had been watching by the sick bed of her mother for some weeks, went out to take a little exercise and enjoy the fresh air. She hoped that she might hear a bird sing, or see some little wild flower which would speak to her of future hope, for her heart was full of anxiety and sorrow. After walking some distance, she came to a ropewalk. She was familiar with the place, and entered. At one end of the building, she saw a little boy turning a large wheel; she thought it too laborious for such a child, and as she came near, she spoke to him.

"Who sent you to this place?" she asked.

"Nobody; I came of myself."

"Does your father know you are here?'

"I have no father."

"Are you paid for your labor?"

"Yes; I get ninepence a day."

"What do you do with your money?"

"I give it all to my mother."

"Do you like this work?"

"Well enough; but if I did not, I should do it that I might get the money for my mother."

"How long do you work in the day?"

"From nine till eleven in the morning, and from two till five in the afternoon."

"How old are you?"

"Almost nine."

"Do you never get tired of turning this great wheel?"

"Yes; sometimes."

"And what do you do then?"

"*I take the other hand.*"

The lady gave him a piece of money.

"Is this for my mother?" he asked, looking pleased.

"No; it is for yourself."

"Thank you, ma'am," the boy said, and the lady bade him farewell.

She went home strengthened in her devotion to duty, and instructed in true practical philosophy, by the words and example of a little child; and she said to herself, "The next time that duty seems hard to me, I will imitate this child, and *take the other hand.*"

BISHOP TAYLOR says, — "It is impossible to make people understand their ignorance, for it requires knowledge to perceive it; and therefore he that can perceive it, hath it not."

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